

COMMONWEALTH OF MASSACHUSETTS

SUFFOLK, ss.

Building Code Appeals Board
Docket No. 10-877

_____)
MA Division of))
Capital Asset Mgmt.,))
Appellant))
v.))
State Building Inspector,))
Appellee))
_____)

BOARD'S RULING ON APPEAL

Introduction

This matter came before the State Building Code Appeals Board ("Board") on Appellant's appeal filed pursuant to G.L. c.143, §100 and 780 CMR 122.1. In accordance with 780 CMR 122.3 the Appellant petitioned the Board for variance from certain emergency voice/alarm communication requirements and certain visual and audible notification requirements of the 7th Edition of 780 CMR (the "Code"), Section 907.2.12.2 (a typographical error in the Appeal inadvertently identified this Section as 907.1.12.2) and Sections 907.9.1 and 907.9.2, respectively; additionally, variances were also sought from the requirements of Section 716.5.3.1 of the Code that requires fire and smoke dampers at duct penetrations of shaft enclosures.

A Hearing relative to the appeal was convened on May 6, 2010. The Appellant and others defending the appeal were present. The Appellee, along with the Assistant Fire Chief of the Town of Amherst, likewise were present. All witnesses were duly sworn.

Exhibits

The following Exhibits were accepted into evidence at the hearing on this matter without objection and reviewed by the Board:

Exhibit 1: State Building Code Appeals Board appeal application form with numerous attachments, dated April 8, 2010.

Findings of Fact

The Board bases the following findings upon the exhibits identified above and the testimony presented at the hearing. There is substantial evidence to support the following findings:

1. On March 19, 2010, the Appellant submitted information to the Appellee identifying certain potential building code issues pertaining to the design of the proposed New

Laboratory Sciences Building, 240 Thatcher Road, Amherst, MA at the University of Massachusetts at Amherst.

2. On March 23, 2010, the Appellee issued a letter of findings of noncompliance, identifying two distinct Code noncompliance matters: emergency voice/alarm communication issues per Section 907.2.12.2 and visible and audible alarm requirements of Sections 907.9.1 and 907.9.2, respectively; additionally, lack of conformance to Code Section 716.5.3.1 which requires fire and smoke dampers at duct penetrations of shaft enclosures, was identified.
3. On April 8, 2010, the Appellant filed for Building Code Appeal, with the State Building Code Appeals Board seeking relief from the 7th Edition, 780 CMR, Code sections cited and presenting defense for the variances requested.
4. The Building Code Appeal Hearing was held on May 6, 2010 in Taunton, Massachusetts.

Code Analysis

The building at interest is a proposed, new construction 6 story research laboratory building with basement portions and where the housing of research animals, is intended. Building Construction Type is IA and USES include B- USE (Offices and Research Laboratories) and H-2 and H-3 USES (Hazardous Materials Storage) /The total building area is reported as 268,146 sq. ft. and the building total height is reported as 86 ft.

The Appellant sought relief from the requirements of Code sections 907.2.12.2 and 907.9.1 and 907.9.2 as such Sections relate to emergency voice/alarm and visual and audible alarm notification appliances, respectively; additionally, the Appellant also sought relief from Code Section 716.5.3.1 which requires fire and smoke dampers at duct penetrations of shaft enclosures.

Through Appeals Board presentation utilizing a white paper titled **“SUPPORTING STATEMENT FIRE ALARM AND FIRE DAMPER VARIANCES NEW LABORATORY SCIENCES RESEARCH LABORATORY UNIVERSITY OF MASSACHUSETTS 240 THATCHER ROAD, AMHERST, MA”** – hereafter, the “Report”, in conjunction with a Plan of the lower portions of the subject building, identified as “FIGURE 2” in the Appeal-supporting materials:

The Appellant testified that in the vivarium portions of the building, identified via the Report and Figure 2 – a portion of the building basement areas – it is necessary to minimize noise and vibration that have been shown to cause distress in some research animals, thus certain Code-required communication requirements and audible and visual alarm requirements were sought allowed modified or not utilized at all.

The Appellant sought, by variance, the right to zone the vivarium so that alarms within such would only sound if an automatic or manual fire detection device, on the same level, activated.

Additionally the Appellant sought to substitute audible “mouse tone” alarm for Code-required audible voice or tone alarms to preclude stressing the laboratory research animals.

The Appellant also sought to provide no horns or strobes in holding rooms identified in the Report and Figure 2.

The Appellant sought to provide "mouse tone" horns in procedure rooms or operating rooms, necropsy cage storage, and certain vestibule areas and locker and service entry as identified on Figure 2, in conjunction with the Report, noted above.

The Appellant sought the use of "mouse tone" horns and strobes in the cage and rack wash rooms.

The Appellant further testified that standard devices and sound in administrative areas would be provided per the Report and Figure 2.

The Appellant explained that a "mouse tone" is a low frequency, sine wave tone that has been utilized in animal facilities as it results in a limited negative response from animal occupants.

The Appellant observed that the animal facilities, where variances from the requirements for standard devices and sound are sought, have limited numbers of regular staff who can be trained relative to fire emergencies; that the subject areas are in the lowest portion of the building so there is no danger from events below this lowest level and further offered that the subject level is separated from the next story above by a rated floor assembly having a rating in excess of two hours with no unprotected openings.

Additionally, the Appellant testified that the facility is to be fully sprinklered and will be provided with complete coverage by system-connected smoke detectors.

With these descriptions the Appellant argued for variances to Code Sections 907.2.12.2 and 907.9.1 and 907.9.2 be allowed given the proposed alternative fire detection and occupant notification system.

Relative to requested variance to Code Section 716.5.3.1, the Appellant testified that it is common practice for laboratory fume hood systems not to provide fire and smoke dampers; additionally, the Appellant noted that NFPA 45, the Standard on Fire Protection for Laboratories Using Chemicals, prohibits installation of automatic fire dampers in laboratory hood exhaust systems.

The Appellant further testified that where ductwork leaves the top of the shafts enclosures at the floor of the mechanical penthouse, it is proposed to provide 2-hour rated duct wrap for enclosure of the duct from the top of the rated shaft to the connection of the duct to the exhaust fans, arguing such approach provided protection comparable to a continuous shaft enclosure although no special protection is intended either inside or outside of the enclosure for the fan and heat exchanger of the exhaust system.

The Appellant also testified that as proposed and under current design intentions, the proposed exhaust system is not classified as a hazardous exhaust system (fire sprinklers would be required within ductwork so classified) thus fire sprinklers are not intended for the subject ductwork exhaust system due to maintenance and operational concerns, coupled with operational experience that indicated that combustible residues do not accumulate in laboratory ductwork, reducing concern of possible fire spread within the laboratory duct system to the equipment in the mechanical penthouse.

The Appellant, citing the proposed protection approach against fire spread, via the exhaust ducts to the exhaust fans, requested a variance from Code Section 716.5.3.1 which imposes a requirement for fire and smoke dampers at the top of the exhaust system shaft.

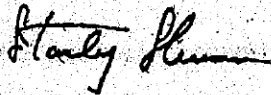
Conclusion

Relative to variance requests to Code Sections 907.2.12.2 and 907.9.1 and 907.9.2, the Board, recognizing the necessity to maintain strict control of research animals, was sympathetic to needs of the proposed Laboratory but remained concerned regarding lack of occupant notification in those areas where traditional notification methods are proposed not utilized at all.

To this end, a Motion was made and seconded that grants the variance relief to Sections 907.2.12.2 and 907.9.1 and 907.9.2, conditioned upon the requirement for some form of occupant notification, via mass notification methods or other methods, acceptable to the Building Official and the Fire Official involved and quantified for the record, be provided – this Board vote was unanimous.

Relative to the variance request to Section 716.5.3.1, and based on the engineered solutions presented by the Appellant, a Motion was made and seconded that the variance, as requested, be **granted** – this Board vote was unanimous.

SO ORDERED.



Stanley Shuman



Jacob Nunnemacher - Chairman




Thomas Riley

DATED: May 27, 2010

Any person aggrieved by a decision of the State Building Code Appeals Board may appeal to Superior Court in accordance with G.L. c.30A, §14 within 30 days of receipt of this decision.

A complete administrative record is on file at the office of the Board of Building Regulations and Standards.

A true copy attest, dated: May 27, 2010



Patricia Barry, Clerk